

AMENDMENTS TO THE CLAIMS

Claims 1–12: (canceled)

13. (previously presented) An adduct comprising MgCl_2 , ethanol and a Lewis base (LB) different from water, said adduct further comprising a fusion enthalpy lower than 100 J/g, and formula $\text{MgCl}_2 \bullet (\text{EtOH})_n (\text{LB})_p$, wherein n is from 2 to 6 and p is $0 < p/(n+p) \leq 0.1$, where the Lewis base is selected from ethers, esters, compounds of formula RX_m , and combinations thereof, wherein RX_m is selected from the group consisting of methanol, propanol, isopropanol, n-butanol, sec-butanol, tert-butanol, pentanol, 2-methyl-1-pentanol, 2-ethyl-1-hexanol, phenol, 4-methyl-1-phenol, 2,6-dimethyl-1-phenol, cyclohexanol, cyclopentanol, ethylene glycol, propylene glycol, 1,4-butanediol, glycerine, mannitol, polyvinyl-alcohol, acetonitrile, ethylenediamine, 3-picoline, triethanolamine, triethylamine, and diisopropylamine.

14. (previously presented) The adduct according to claim 13, wherein p is $0 < p/(n+p) \leq 0.0125$.

15. (canceled)

16. (canceled)

17. (canceled)

18. (previously presented) A catalyst component for polymerizing at least one olefin comprising a product of a reaction between a transition metal compound and the adduct according to claim 13.

19. (currently amended) The catalyst component according to claim 18, wherein the transition metal compound is selected from ~~at least one~~ a titanium compound of ~~comprising~~ formula $\text{Ti}(\text{OR})_n \text{X}_{y-n}$, wherein n is between 0 and y; y is a valence of titanium; X is halogen; and R is an alkyl radical comprising 1-8 carbon atoms, or COR, wherein R is a hydrocarbon group comprising from 1 to 20 carbon atoms.

20. (currently amended) ~~The catalyst component according to claim 19.~~ A catalyst component for polymerizing at least one olefin, the catalyst component comprising a product of a reaction between a transition metal compound and an adduct,

the adduct comprising MgCl_2 , ethanol and a Lewis base (LB) different from water, said adduct further comprising a fusion enthalpy lower than 100 J/g, and formula $\text{MgCl}_2 \bullet (\text{EtOH})_n (\text{LB})_p$, wherein n is from 2 to 6 and p is $0 < p/(n+p) < 0.1$, where the Lewis base is selected from ethers, esters, compounds of formula RX_m , and combinations thereof, wherein RX_m is selected from the group consisting of methanol, propanol, isopropanol, n-butanol, sec-butanol, tert-butanol, pentanol, 2-methyl-1-pentanol, 2-ethyl-1-hexanol, phenol, 4-methyl-1-phenol, 2,6-dimethyl-1-phenol, cyclohexanol, cyclopentanol, ethylene glycol, propylene glycol, 1,4-butanediol, glycerine, mannitol, polyvinyl-alcohol, acetonitrile, ethylenediamine, 3-picoline, triethanolamine, triethylamine, and diisopropylamine, and

the transition metal compound being selected from at least one titanium compound, wherein the titanium compound is selected from TiCl_3 , TiCl_4 , $\text{Ti}(\text{OBu})_4$, $\text{Ti}(\text{OBu})\text{Cl}_3$, $\text{Ti}(\text{OBu})_2\text{Cl}_2$, and $\text{Ti}(\text{OBu})_3\text{Cl}$.

21. (previously presented) The catalyst component according to claim 18, wherein the reaction between the transition metal compound and the adduct is carried out in presence of an electron donor compound.

22. (previously presented) The catalyst component according to claim 21, wherein the electron donor is selected from esters, ethers, amines, and ketones.

23. (currently amended) A catalyst for polymerizing at least one olefin comprising a product of a reaction between ~~the~~ catalyst component ~~according to claim 19~~, and an aluminum alkyl compound, the catalyst component comprising a product of a reaction between a transition metal compound and an adduct,

the adduct comprising MgCl_2 , ethanol and a Lewis base (LB) different from water, said adduct further comprising a fusion enthalpy lower than 100 J/g, and formula $\text{MgCl}_2 \bullet (\text{EtOH})_n (\text{LB})_p$, wherein n is from 2 to 6 and p is $0 < p/(n+p) < 0.1$, where the Lewis base is selected from ethers, esters, compounds of formula RX_m , and combinations thereof, wherein RX_m is selected from the group

consisting of methanol, propanol, isopropanol, n-butanol, sec-butanol, tert-butanol, pentanol, 2-methyl-1-pentanol, 2-ethyl-1-hexanol, phenol, 4-methyl-1-phenol, 2,6-dimethyl-1-phenol, cyclohexanol, cyclopentanol, ethylene glycol, propylene glycol, 1,4-butanediol, glycerine, mannitol, polyvinyl-alcohol, acetonitrile, ethylenediamine, 3-picoline, triethanolamine, triethylamine, and diisopropylamine, and

the transition metal compound being selected from at least one titanium compound, wherein the titanium compound is selected from $TiCl_3$, $TiCl_4$, $Ti(OBu)_4$, $Ti(OBu)Cl_3$, $Ti(OBu)_2Cl_2$, and $Ti(OBu)_3Cl$.

24. (previously presented) A process for polymerizing at least one olefin of formula $CH_2=CHR$, wherein R is hydrogen or a hydrocarbon radical comprising 1-12 carbon atoms, carried out in presence of the catalyst according to claim 23.

25. (canceled)

26. (canceled)

27. (previously presented) The adduct of claim 13, wherein RX_m is selected from the group consisting of phenol, 4-methyl-1-phenol, 2,6-dimethyl-1-phenol, ethylene glycol, propylene glycol, 1,4-butanediol, glycerine, mannitol, polyvinyl-alcohol, acetonitrile, ethylenediamine, 3-picoline, triethanolamine, triethylamine, and diisopropylamine.